

AMENDMENT TO THE CLAIMS

1. (currently amended) A method for measuring dielectric constant of body tissues under the skin and body impedance based on ~~a method of~~ frequency digital sampling and for evaluating body composition, ~~the method~~ comprising:

inputting by keyboard a testee's serial number, height, age, gender, and parameter indicating whether or not an athlete;

standing a testee with the testee's feet on a measuring platform having a weighing sensor to measure body weight,

providing a body weight signal from the weighing sensor to a weighing signal processing circuit;

generating oscillating frequency signals related to testee's impedances and dielectric constant of tissues under the skin with a positive feedback RC oscillator circuit and connecting the positive feedback RC oscillator circuit to an MCU system for frequency digital sampling;

calculating body fat content and total body water by software of the MCU system, ~~and displaying body weight, body fat content and total body water on thea display, wherein said method further comprises:~~

~~providing body weight signals from the weighing signal processing circuit as frequency signals;~~

connecting the positive feedback RC oscillator circuit with two ends of a capacitance grid sensor to generate an oscillating frequency related to dielectric constant of body tissues under the skin by positioning testee's feet soles to contact the capacitance grid sensor on the measuring platform;

connecting the positive feedback RC oscillator circuit with two electrode plates or two groups of electrode plates on the measuring platform, and generating oscillating frequency signals related to body impedance by positioning the testee's feet soles to contact the two electrode plates or two groups of electrode plates within a certain area on the measuring platform;

introducing switched capacitors with different capacitance values to said positive feedback RC oscillator circuit and obtaining several oscillating signals with non-fixed different frequencies related to body impedance;

inputting body weight frequency signals coming from the weighing signal processing circuit, oscillating frequency signals related to dielectric constant of body tissues under the skin and body impedance signals corresponding to the several oscillating signals with non-fixed different frequencies from the switched capacitors through an I/O interface of the MCU system;

calculating from the signals provided to the I/O interface a ratio between intracellular water and total body water through software of the MCU system; and  
displaying the ratio between intracellular water and total body water.

2. (previously presented) The method for measuring dielectric constant according to claim 1, wherein: one end of the said capacitance grid sensor (Cm) in contact with testee's feet soles is connected with one end of a capacitor (Ca); and other ends of the capacitance grid sensor and capacitor are respectively connected with an output end of one inverter and an input end of another inverter; and the input end of the one inverter is connected with an output end of the another inverter.

3. (currently amended) A method for measuring dielectric constant according to claim 1, wherein: an input end of one inverter is connected with an output end of the another inverter at a connection; and connecting a series-wound circuit comprising a resistor (Ra) and body impedance (Rm) between the connection and an input end of another inverter, and two ends of a capacitor (Ca) are connected respectively with an output end of the one inverter and an input end of the another inverter.

4. (currently amended) A method for measuring dielectric constant according to claim 1, wherein: a body impedance (Rm) is in a series connection with a first resistor (Ra2) and then in

parallel connection with a second resistor (Ra1) to form a series-parallel circuit; one end of the series-parallel circuit is connected to an inverting terminal of a D trigger; and the another end of the series-parallel circuit is connected with a CD end, and a CLK end, ~~and~~ a GND end of the D trigger.

5. (previously presented) A method for measuring dielectric constant according to claim 1, comprising introducing a body impedance element (Rm) to said positive feedback RC oscillator circuit; switching and introducing a plurality of capacitors to said positive feedback RC oscillator circuit.

6. (currently amended) A body composition monitor apparatus for measuring dielectric constant of body tissues under the skin and body impedance based on a method of frequency digital sampling, the apparatus comprising a measuring unit and a display unit, where the measuring unit and the display unit comprise a measuring platform, a pair of electrode plates, a weighing sensor, a MCU system, a display, and a keyboard; wherein said apparatus also includes a weighing signal processing circuit, a positive feedback RC oscillator circuit for measuring a dielectric constant of body tissue under the skin and body impedance, and a plurality of capacitance grid sensors providing dielectric constant signals of body tissues under the skin to said positive feedback RC oscillator circuit, wherein:

the electrode plates form electrodes for measuring body impedance of a person standing thereon and being connected with said positive feedback RC oscillator circuit to provide an only impedance signal to said positive feedback RC oscillator circuit; and

the positive feedback RC oscillator circuit and the weighing signal processing circuit are in electrical connection with a microprocessor of the MCU System.

7. (cancelled)

8. (currently amended) Apparatus according to claim 6, wherein: in one connection mode of said positive feedback RC oscillator circuit for measuring dielectric constant of body tissues under the skin, one end of one capacitance grid sensor (Cm) is connected with one end of a capacitor (Ca); other ends of the one capacitance grid sensor (Cm) and the capacitor (Ca) are respectively connected with an output end of one inverter and an input end of another inverter; a resistor (Ra) is in series circuit connection with a body impedance (Rm), and ends of the series circuit are connected with an input end of the another inverter and the output end of the one inverter; an input end of the one inverter is connected with an output end of the another inverter.

9. (currently amended) Apparatus according to claim 6, wherein: in one connection mode of said positive feedback RC oscillator circuit for measuring body impedance, an input end of one inverter is connected with an output end of another inverter; connecting a series wound circuit comprising a resistor (Ra) and the body impedance (Rm) between the connection of the two inverters and an input end of another inverter; ~~a series wound circuit comprising a resistor (Ra) and a body impedance (Rm)~~, and ends of a capacitor (Ca) are connected respectively to an output end of the one inverter and an input end of the another inverter.

10. (currently amended) Apparatus according to claim 6, wherein: in one connection mode of said positive feedback RC oscillator circuit for measuring body impedance, a body impedance (Rm) is connected with a first resistor (Ra1) and with a second resistor (Ra2) to form a series-parallel circuit; one end of the series-parallel circuit is connected with an inverting end of a D trigger; and a second end of the series-parallel circuit is connected with a CD end, a CLK end, ~~and a GND end~~ of the D trigger.

11-14. (cancelled)

15. (currently amended) Apparatus according to claim 6, furtherwherein: including an

infrared signal emitter; an electrical signal is input from a base electrode of a first audion (T1); collectors of the first audion (T1) and a second audion (T2) are connected with one port of the infrared emitter; and another port of the infrared emitter is connected with a current-limiting resistor (R1); the infrared emitter emitting a real-time infrared data signal; and an infrared receiver receiving the infrared data signal, which is converted to an electrical signal and transmitted from the infrared receiver to a base electrode of a third audion (T3); a collector of the third audion (T3) is connected with an input level of a decoder; an output level of the decoder is connected with the MCU System.

16. (currently amended) Apparatus according to claim 6, wherein: said display unit includes an infrared emitter comprising an infrared signal transmitting circuit having an infrared emitter; a receiver receiving the infrared signal and providing an electrical signal that is transmitted from the infrared receiver to a base electrode of a first audion (T7); a collector of the first audion (T7) is connected with an interface of the MCU system of the display unit; the interface of the MCU system of the display unit sends electrical signal to an input interface of an encoder, the encoder having an output interface connected with a base electrode of a second audion (T5); collectors of the second audion (T5) and a third audion (T6) are connected with the infrared emitter; and the infrared emitter is further connected with a current-limiting resistor (R4); whereby the infrared emitter emits infrared instruction signals.